

IN THE CLAIMS:

Please CANCEL claims 57-59 without prejudice to or waiver of their subject matter. Also, please AMEND claims 1, 3, 10, 14-17, 29,-31, 36, 42, and 47 as follows.

1. (Currently Amended) An image printing method for executing an operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said method comprising:

a first distributing step for, of first and second areas defined on the printing medium in relation to feeding said printing medium, distributing data for the dots to be formed on the same line of the first area by using mask patterns, among the plurality of scans; and

a second distributing step for distributing data for the dots to be formed on the same line of the second area, in which a deviation of dot forming location becomes larger than that in the first area, by using mask patterns, among the plurality of scans,

wherein the number of scans to the same line of the first area which data distribution are performed in the first distributing step is the same as the number of scans to the same line of the second area which data distribution are performed in the second distributing step, and

wherein data distribution ratios of the mask patterns for the plurality of scans, which are used for the first distributing step, are different from the data distribution ratios of the mask patterns for the plurality of scans, which are used for the second distributing step.

2. (Previously Presented) An image printing method as claimed in claim 1, wherein the first area is an area on the printing medium printable with the printing head when the printing medium is held by both an upstream roller and a down stream roller, both roller being provided for feeding the printing medium, and the second area is an area on the printing medium printable with the printing head when the printing medium is held by any one of the upstream roller and the down stream roller.

3. (Currently Amended) An image printing method for executing an operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed, by at least one of a first feed roller and a second feed roller, between the scans scan of the printing head, to print an image on the printing medium, said method comprising the steps:

a first distributing step for distributing the data for the dots to be formed on the same line of a first area on the printing medium by using mask patterns, among the plurality times of scans, the dot formation onto the first area being performed in a state where the printing medium is held by both the first feed roller and the second feed roller, the first feed roller being disposed on a upstream side of the printing head in a direction in which the printing medium is

fed and the second feed roller being disposed on a downstream side of the printing head in the feed direction; and

a second distributing step for distributing data for the dots to be formed on the same line of a second area different from the first area on the printing medium by using mask patterns, among the plurality of scans, the dot formation onto the second area being performed in a state where the printing medium is held by any one of the first feed roller and the second feed roller,

wherein the number of scans to the same line of the first area is the same as the number of scans to the same line of the second area, and

wherein data distribution ratios of the mask patterns used in said first distributing step when the printing medium is in a first location in which the printing medium is held by both an upstream roller and a downstream roller, both rollers being provided for feeding the printing medium, are different from the data distribution ratios of most the mask patterns used in the second distributing step when the printing medium is in a second location in which the printing medium is held by any one of the upstream roller and the downstream roller.

Claims 4 to 7 (Cancelled).

8. (Previously Presented) An image printing method as claimed in claim 3, wherein printing on the second area is performed using a part of the plurality of printing elements in the printing head during the plurality of scans between which a feeding operation by a smaller feeding amount than the feeding amount in the first area is intervened.

Claim 9 (Cancelled).

10. (Currently Amended) An image printing method as claimed in claim 3, wherein the data distribution ratios of the mask patterns used in the second distributing step are determined so that, of the plurality of scans, for a scan ~~the which is separated~~ a longer time ~~separated~~ from a predetermined scan, the higher data distribution ratio is determined.

11. (Previously Presented) An image printing method as claimed in claim 10, wherein the predetermined scan is a scan in which an accumulated error relating to feeding of the printing medium in the second area is maximum, and the distributing of data is performed for only the scan in which the accumulated error is smaller than a predetermined value.

12. (Previously Presented) An image printing method as claimed in claim 3, wherein a sum of the data distribution ratios of the mask patterns used in the second distributing step is greater than 100%.

13. (Previously Presented) An image printing method as claimed in claim 12, wherein noises are added to the mask patterns for making the sum of the data distribution ratios of the mask patterns to be greater than 100%.

14. (Currently Amended) An image printing method for executing an scanning operation that causes a printing head[[],] having a plurality of ~~arranged~~ printing

elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an feeding operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said method comprising:

a first distributing step for distributing data for the dots to be formed on the same line of ~~the~~ a first area on the printing medium by using mask patterns, among the plurality of scans, the first area being printed during the plurality of scans between which the feeding operation by a first feeding amount is intervened; and

a second distributing step for distributing data for the dots to be formed on the same line of ~~the~~ a second area on the printing medium, by using mask patterns, among the plurality of scans, the second area being printed during the plurality of scans between which the feeding operation by a second feeding amount smaller than the first feeding amount is intervened,

wherein the number of scans to the same line of the first area which data distribution are performed in the first distributing step is the same as the number of scans to the same line of the second area which data distribution are performed in the second distributing step, and

wherein the mask patterns used for the first distributing step are different from the mask patterns used for the second distributing step.

15. (Currently Amended) An image printing method as claimed in claim 14, wherein each mask pattern used for the second distributing step is a pattern ~~for forming~~ which can form a plurality of dots continuously in a feeding direction.

16. (Currently Amended) An image printing method as claimed in claim 14, wherein each mask pattern used for the second distributing step is a pattern ~~for forming~~ which can form a plurality of dots continuously in a feeding and scanning direction.

17. (Currently Amended) An image printing method as claimed in claim 14, wherein each mask pattern used for the second distribution step is a pattern where dot ~~printable formable~~ positions ~~is~~ are arranged at random.

Claim 18 (Cancelled).

19. (Previously Presented) An image processing method as claimed in claim 14, wherein the second feeding amount is set at 1/N (N is an integer greater than or equal to 2) of the first feeding amount.

20. (Previously Presented) An image processing method for generating data used in operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the

printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said method comprising:

performing a process relating to generation of dot forming data for printing in each of the plurality of scans on a second area in which a deviation of dot forming location becomes larger than that in a first area, the first and second areas being defined on the printing medium in relation to feeding said printing medium, wherein a process relating to generation of dot forming data for the second area is different from the process relating to generation of dot forming data for the first area, the process relating to generation of dot forming data being a process using an index pattern in accordance with density level of a pixel.

21. (Previously Presented) An image processing method for generating data used in operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said method comprising:

performing a process relating to generation of dot forming data for printing in each of the plurality of scans on a second area in which a deviation of dot forming location becomes larger than that in a first area, the first and second areas being defined on the printing medium in relation to feeding said printing medium, a process relating to generation of dot forming data for the second area is different from the process relating to generation of dot

forming data for the first area, the process relating to generation of dot forming data being an error diffusion process.

22. (Previously Presented) An image processing method for generating data used in operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said method comprising:

performing a process relating to generation of dot forming data for printing in each of the plurality of scans on a second area in which a deviation of dot forming location becomes larger than that in a first area, the first and second areas being defined on the printing medium in relation to feeding said printing medium, a process relating to generation of dot forming data for the second area is different from the process relating to generation of dot forming data for the first area, the process relating to generation of dot forming data being a dither process.

23. (Previously Presented) An image printing method as claimed in claim 14, wherein the printing head is capable of forming at least first color dots and second color dots, and the mask patterns used for the second distributing step are different between the first and second color.

24. (Previously Presented) An image printing method as claimed in claim 14, wherein the mask patterns used for the second distributing step are different depending on printing modes.

25. (Previously Presented) An image printing method as claimed in claim 14, wherein the printing head is capable of forming two or more sizes of dots and the mask patterns used for the second distributing step are different in accordance with the size of dot formed.

Claim 26-27 (Cancelled).

28. (Previously Presented) A control method for a printing apparatus, which uses a printing head having a plurality of printing elements and performs scanning with the printing head relatively to a printing medium so as to perform printing,

wherein if printing is performed on a second area in which a deviation of dot forming location becomes larger than that in a first area, the first and second areas being defined on the printing medium in relation to feeding said printing medium, feeding of the printing medium is executed at the same feeding amount as the first area, a range of printing elements used is changed by shifting the printing elements used without changing a number of printing elements which is a number of printing elements used for the first area, and printing is controlled to be performed with the changed printing elements.

29. (Currently Amended) An image processing printing apparatus for generating data used in a printing apparatus for executing an operation that causes a printing head having a plurality of arranged printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said apparatus comprising:

first distributing means for, of first and second areas defined on the printing medium in relation to feeding said printing medium, distributing data for the dots to be formed on the same line of the first area by using mask patterns, among the plurality of scans; and

second distributing means for distributing data for the dots to be formed on the same line of the second area, in which a deviation of dot forming location becomes larger than that in the first area, by using mask patterns, among the plurality of scans,

wherein the number of scans to the same line of the first area which data distribution are performed in the first distributing means is the same as the number of scans to the same line of the second area which data distribution are performed in the second distributing means,

wherein data distribution ratios of the mask patterns for the plurality of scans, which are used for said first distributing means, are different from the data distribution ratios of the mask patterns for the plurality of scans, which are used for said second distributing means.

30. (Currently Amended) An image processing apparatus as claimed in claim 29, wherein the first area is an area on the printing medium recordable printable with the

printing head when the printing medium is held by both an upstream roller and a down stream roller, both roller being provided for feeding the printing medium, and the second area is an area on the printing medium printable with the printing head when the printing medium is held by any one of the upstream roller and the down stream roller.

31. (Currently Amended) An image processing printing apparatus for generating data used in a printing apparatus for executing an operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and an operation that causes the printing medium to be fed between the scans scan of the printing head, to print an image on the printing medium, said apparatus comprising:

a first roller for feeding the printing medium, the first feed roller being disposed on a upstream side of the printing head in a direction in which the printing medium is fed;

a second roller for feeding the printing medium, the second feed roller being disposed on a downstream side of the printing head in a direction in which the printing medium is fed;

first distributing means for distributing the data for the dots to be formed on the same line of a first area on the printing medium by using mask patterns, among the plurality of scans, the dot formation on the first area being performed in a state where the printing medium is held by both the first feed roller and the second feed roller; and

second distributing means for distributing data for the dots to be formed on the same line of a second area different from the first area on the printing medium by using mask patterns, among the plurality of scans, the dot formation onto the second area being performed in a state where the printing medium is held by any one of the first feed roller and the second feed roller,

wherein the number of scans to the same line of the first area is the same as the number of scans to the same line of the second area, and

wherein data distribution ratios of the mask patterns used by said first distributing means when the printing medium is in a first location in which the printing medium is held by both an upstream roller and a downstream roller, both rollers being provided for feeding the printing medium are different from the data distribution ratios of the mask patterns used by said second distribution means when the printing medium is in a second location in which the printing medium is held by any one of the upstream roller and the downstream roller.

Claim 32-35 (Cancelled).

36. (Currently Amended) An image processing printing apparatus as claimed in claim 31, wherein printing on the second area is performed using a part of the plurality of printing elements in the printing head during the plurality of scans between which a feeding operation by a smaller feeding amount than the feeding amount in the first area.

Claim 37-41 (Cancelled).

42. (Currently Amended) An image processing apparatus for generating data used in a printing apparatus for executing an scanning operation that causes a printing head having a plurality of printing elements to scan a plurality of times on a same line on a printing medium so that different printing elements are used in the plurality of scans to form dots on the same line, and a feeding operation that causes the printing medium to be fed between the scans of the printing head, to print an image on the printing medium, said apparatus comprising:

first distributing means for distributing data for the dots to be formed on the same line of ~~the a~~ first area on the printing medium by using mask patterns, among the plurality of scans, the first area being printed during the plurality of scans between which the feeding operation by a first feeding amount is intervened; and

second distributing means for distributing data for the dots to be formed on the same line of ~~the a~~ second area on the printing medium by using mask patterns, among the plurality of scans, the second area being printed during the plurality of scans between which the feeding operation by a second feeding amount smaller than the first feeding amount is intervened,

wherein the number of scans to the same line of the first area which data distribution are performed in the first distributing means is the same as the number of scans to the same line of the second area which data distribution are performed in the second distributing means, and

wherein the mask patterns used for said first distributing means are different from the mask patterns used for the second distributing means.

Claims 43-46 (Cancelled).

47. (Currently Amended) An image processing printing apparatus as claimed in claim 42, wherein the first feeding amount is set at $1/N$ (N is an integer greater than or equal to 2) of the second feeding amount.

Claims 48-55 (Cancelled).

56. (Currently Amended) A printing apparatus, which uses a printing head having a plurality of printing elements and performs scanning with the printing head relatively to a printing medium so as to perform printing,

wherein if printing is performed on a second area in which a deviation of dot forming location becomes larger than that in a first area, the first and second areas being defined on the printing medium in relation to feeding said printing medium, feeding of the printing medium is executed at the same feeding amount as the first area, a range of printing elements used is changed by shifting the printing elements used without changing a number of printing elements which is a number of printing elements used for the first area, and printing is controlled to be performed with the changed printing elements.

Claims 57-59. (Cancelled)